

CHRISTIAN (E.A.)

A Case of General Paralysis
Apparently of Traumatic
Origin.

BY

E. A. CHRISTIAN, M. D.,
Pontiac, Mich.

Reprint

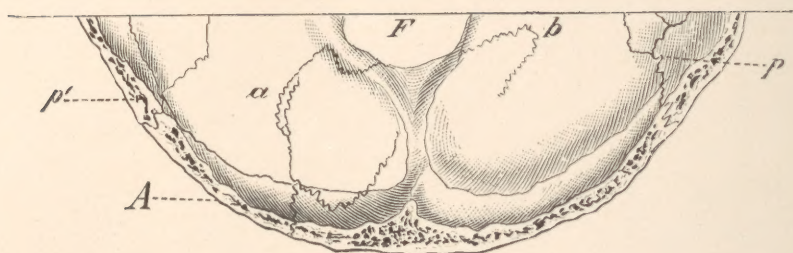
FROM

The American Journal of Insanity,
Utica, April, 1888.









POSTERIOR PORTION OF INTERNAL SURFACE OF
OCCIPITAL BONE.

At *a* there was separation of the edges of the fracture with corresponding over-riding at *b*. *A*, the groove for the lateral sinus. *F*, foramen magnum. *p*, *p'*, parieto-occipital suture.

A CASE OF GENERAL PARALYSIS APPARENTLY OF TRAUMATIC ORIGIN.

BY E. A. CHRISTIAN, M. D.,

Assistant-Physician, Eastern Michigan Asylum, Pontiac, Mich.

The accompanying notes of a case of extensive fracture of the base of the skull have been deemed of sufficient interest to justify their publication as a contribution to the clinical study of some of the more remote consequences of a traumatic basal meningitis.

Among the points of special interest may be noted the existence of an external wound apparently of trifling importance, having little in itself to indicate the extent to which injury had been inflicted upon the skull; an absence at the time of the injury of signs of compression, such as prolonged loss of consciousness, paralysis, etc.; the development after a few days of acute delirium and fever, pointing to inflammation of the membranes, but without accompanying paralysis; recovery from acute symptoms succeeded by a stage of mental weakness, passing slowly into a state of more profound intellectual disturbance, and a slowly developing paresis and incoördination of muscular movements; the existence of certain signs pointing to implication of the cerebellum, the most prominent of which was a disturbance of equilibrium; death five months subsequent to the receipt of the injury from sudden and total paralysis of voluntary motion.

At the autopsy there were found evidences of long standing inflammation both of *dura* and *pia* which had finally led to compression of the cord by an abundant effusion of serum into the sub-arachnoid spaces in the vicinity of the medulla. There was also an extensive fracture with slight displacement of the occipital bone. Symmetrical spots of softening existed on the inferior surfaces of both lateral lobes of the cerebellum. These were probably due to the slight but prolonged pressure exerted by the fractured plate of bone.

The symptoms which the patient presented at the time of his admission to the asylum were quite characteristic of general paresis, and seemed to warrant a diagnosis of paralytic dementia of traumatic origin; and in the light of the subsequent history of the case we are tempted to wonder if after all general paresis may not have been the primary condition, complicated by an acute process, and possibly hastened in its course by the injury itself.

Unfortunately a microscopical examination of the brain was not practicable.

L. M. T., age 53, a commercial traveler, had been a moderate drinker for many years. Previous to the great Chicago fire he had been a prosperous business man in that city, but loss of property, domestic infelicities and dissipated habits had combined to make the last ten or twelve years of his life unsuccessful. It was the opinion of his family physician that he had been losing mental vigor for several years previous to meeting with the injury.

On May 8, 1887, he was thrown heavily upon a stone, receiving the force of the blow upon the left side of the occiput. He is said to have been unconscious when picked up by the friends who were with him at the time, but upon reaching home after a ride of an hour in a wagon, he recognized his sister and was able to speak to her. The physician who was summoned found him vomiting frequently and suffering from shock, but able to render some assistance to himself. An irregular scalp wound not more than an inch in length presented itself, at the bottom of which there appeared to be a slight depression of the external table. The doctor observed no symptoms warranting, in his estimation, operative interference, and at once closed the scalp wound, which healed kindly in a few days without suppuration.

On the third day following the receipt of the injury the patient grew restless and manifested a tendency to wander in his conversation. This condition soon gave place to one of active delirium accompanied by a rise of temperature. Acute symptoms persisted for ten days, during which period his condition much of the time demanded the exercise of manual restraint to keep him in bed. His friends noticed at this time that his hand grasp on both sides was feeble, and that there was an uncertainty in his voluntary movements, more particularly noticeable when reaching for objects. As his delirium subsided he complained frequently of pain in the back of his head, and when occasion arose for a change of position he supported himself on his elbows and rotated his head with his body. Later he was reluctant to leave his bed, and seemed to distrust his ability to make proper use of his lower extremities. It then became noticeable that there was marked ataxia. As his sister expressed it, he seemed unable to "measure distances." He had difficulty in preserving his equilibrium, especially when turning around. Sudden changes of position, as in rising from a sitting to a standing posture, were especially liable to provoke staggering with subjective sensations of loss of

balance. There had been constantly present more or less discomfort at seat of injury, often amounting to severe occipital headache. Momentary flushing of face with prominence of superficial veins were a frequent manifestation.

After the subsidence of the active delirium there remained a condition of mental weakness associated with confusion of ideas. This varied in degree from time to time, but was always such as to require that he be kept under constant observation. He became self-willed and petulant, occupied himself in apparently purposeless acts, and showed loss of memory, especially for recent events. Notwithstanding the existence of varying delusions, some of an expansive type, his conversation was coherent and his reasoning plausible.

At the time of his admission to the Eastern Michigan Asylum, in September, 1887, four months after the date of his injury, he was controlled by the belief that he had large bodies of troops at his command, and that he was attended by an invisible double named "Jack." His mind was also fertile in schemes for the invention of machinery. Physically he seemed reduced. Temperature was normal, but his pulse and respirations were accelerated. The chief symptoms, however, pointed to a lesion of the nervous system. He spoke hesitatingly and with decided thickness of articulation. Gait was markedly ataxic. He walked with wide base of support, and experienced difficulty in moving over uneven places. Sudden turning of his head to the left was immediately followed by an abolition of equilibrium and a fall to the floor. He was, however, able to turn his head slowly in this direction, and to hold it there without loss of balance, but not without more or less pain. He could not lie on his left side at night without the development of distressing vertiginous sensations. There were in addition certain subjective symptoms. He complained frequently of a feeling as if cold water were trickling down his legs, and of a strange feeling in the left side of his brain, as if a big lump were there. He thought that if he could get rid of that he would be all right. He talked pleasantly and with some appreciation of his condition; but there was constantly present in his conversation a disposition to reduplicate final words. His extravagant delusions and marked ataxia, taken in connection with a history of previous intemperance and of a loss of mental vigor for some time prior to the accident, certainly justified a diagnosis of general paralysis in an advanced stage. But the locality of the injury and certain other symptoms sufficiently detailed above

suggested, even at this time, the presence of cerebellar lesion. He improved rapidly under treatment, both mentally and physically, so that at the expiration of a month he seemed to have dropped his delusions and to have gained in mental vigor. He was able at this time to go out with other patients to pick up potatoes, and felt pleased that he was able to do something useful. The ataxia and the distress about his head underwent little change. He spoke of these troubles frequently, and expressed much concern about them.

On the morning of October 24th, a little more than a month after his admission, he complained of not feeling well. He soon became nauseated and had frequent calls to pass his water, accompanied by a severe pain in testicles. There were also distressing vesical and rectal tenesmus. Two hours subsequently he was discovered by an attendant at stool, helpless and unable to rise. When assisted to his feet and supported for a minute, he regained sufficient power over his legs to support his weight. Attempts to dress himself were attended by such violent choreiform movements of his arms as to compel a discontinuance of the effort. The same difficulty accompanied his attempts to walk. His feet and legs flew about independently of efforts of the will to direct them. He had vomited repeatedly. The matter ejected consisted principally of the juices of the stomach, and was expelled in a jet without warning or accompanying nausea. There were no intellectual disturbances. A little later, as he lay on the bed, there occurred at intervals of a few seconds, severe clonic spasms of the flexor muscles, especially of the arms. The only pain complained of was an occasional twinge following the course of the sciatic nerve. He could not support himself in a sitting posture, and when raised from the bed he complained of intense vertigo and nausea. Reflexes at this stage were all normal.

Towards evening his temperature fell to subnormal (96° F.) Efforts at articulation became more labored, deglutition slowly failed, paralysis of voluntary movements progressed and finally became absolute. Owing to the difficulty in breathing, which was from the first thoracic, it was necessary for him to pass the entire night propped up in bed with his head supported by an attendant to prevent its falling forward upon his chest. From the first sensation was intact, and the slightest movement of his head caused him to cry out with pain. His intellect remained clear up to within a few minutes of his death, which finally resulted from failure of respiration eighteen hours after the appearance of paralytic symptoms.

Post-mortem examination held four hours after death. Skull-cap of normal appearance. *Dura* generally thickened and adherent to inner surface of bone, and separated with difficulty, tearing in spots where adhesions were firmest. The superior longitudinal sinus through a portion of its extent showed evidences of an inflammatory process. The walls were thickened and the inner coat had a pink appearance with numerous bead-like vegetations projecting from its surface. There were no signs of a thrombus. Along the vessels of the *pia* there was the usual milky exudate frequently met with in cases of insanity. An explanation of the symptoms of pressure upon the anterior columns of the cord was found on lifting the medulla from its groove in the basilar process of the occipital bone, when several drams of straw-colored serum escaped from between the membranes. Along the floor of the skull the *dura* was even more closely attached to the bone than at the vault. It was every where thickened and presented a dirty white appearance. As the membrane was raised from the surface of the occipital bone there at once came into view the remains of an extensive fracture which had involved in its course the groove for the lateral sinus on the left side, both fossæ, and the *foramen magnum*. The course and extent of the line of fracture is well indicated in the accompanying illustration. On the right side there was some over-riding of the edges of the fracture, and on the left side a corresponding separation easily admitting the handle of the scalpel. Over a corresponding area the surface of the bone was rough, presenting the appearance of bony granulations springing from the *endosteum*. Notwithstanding the great extent of the line of fracture there were no vestiges of any former laceration of any meningeal vessel. The inferior surfaces of both cerebellar hemispheres presented symmetrical spots of softening involving only the grey matter of the convolutions. The one on the left side was somewhat the larger, not more than one-half inch in diameter. In color the softened portions did not differ materially from the contiguous healthy tissue. There was no collection of pus visible at any point, either externally to the membrane, or within the brain. Cross sections of the brain were made without discovering further gross lesions. The intra-ventricular fluid was normal in quantity. There were no evidences of vascular changes.

